



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,736	07/31/2003	Shinji Imai	Q76736	1390
23373	7590	10/13/2004	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			HANNAHER, CONSTANTINE	
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 10/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/630,736

Applicant(s)

IMAI, SHINJI

Examiner

Constantine Hannaher

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 20040914.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION**Claim Rejections - 35 USC § 103**

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imai (EP0898421A2) in view of Fallone *et al.* (US005686733A) and Brauers *et al.* (US005729021A).

With respect to independent claim 1, Imai discloses an image recording medium having the six recited layers (since first electrode layer **5** comprises a glass plate which serves as support and is permeable to the reading electromagnetic wave, column 17, lines 30-33, and since the combination of recording photoconductive layer **2** and charge transport layer **3** serves as a charge accumulating portion, Fig. **3D**). At least one of the photoconductive layers **2**, **4** is formed of a material containing amorphous selenium as a major component, column 17, line 35, and column 18, line 6. Imai does not identify any doping. Fallone *et al.* discloses that an image recording medium with a photoreceptor layer of amorphous selenium is preferably doped with arsenic and chlorine (column 8, lines 64-65). Brauers *et al.* discloses that arsenic doping counteracts recrystallization of a layer of amorphous selenium in an image sensor (column 6, lines 35-36). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the image recording medium of Imai to dope the amorphous selenium layers therein as suggested by Fallone *et al.* especially in view of the advantageous counteraction of recrystallization identified by Brauers *et al.* for such doping.

With respect to dependent claim 2, the doping suggested by Brauers *et al.* for counteracting recrystallization is the recited element.

With respect to dependent claim 3, Fallone *et al.* makes explicit that the level of doping with arsenic is a choice within the ordinary skill in the art (column 8, line 67 to column 9, line 1). Brauers *et al.* discloses a range of doping with arsenic (column 6, lines 35-36) that encompasses the claimed range with sufficient specificity to establish obviousness. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the image recording medium of Imai to dope the amorphous selenium layers therein as suggested by Fallone *et al.* in an amount within the range identified by Brauers *et al.* for such doping in view of the effective performance in counteracting recrystallization.

With respect to dependent claim 4, as already established, Fallone *et al.* identifies doping a layer of amorphous selenium in an image recording medium with chlorine as routine and preferable (column 8, lines 64-65). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the image recording medium of Imai to dope the amorphous selenium layers therein as suggested by Fallone *et al.* with chlorine.

With respect to dependent claim 5, Fallone *et al.* makes explicit that the level of doping with chlorine is a choice within the ordinary skill in the art (column 8, line 67 to column 9, line 1).

With respect to dependent claims 6 and 7, the thickness of the recording photoconductive layer 2 in the image recording medium of Imai is in a range (see claim 3) which encompasses the recited ranges with sufficient specificity to establish obviousness.

With respect to independent claim 8, Imai discloses an image recording medium having the six recited layers (since first electrode layer 5 comprises a glass plate which serves as support and is permeable to the reading electromagnetic wave, column 17, lines 30-33, also note "charge transport

layer” 3). The charge transfer layer 3 is formed of a material containing amorphous selenium as a major component, column 17, lines 45-51 doped with chlorine. Fallone *et al.* discloses that an image recording medium with a photoreceptor layer of amorphous selenium is preferably doped with arsenic and with chlorine (column 8, lines 64-65). Brauers *et al.* discloses that arsenic doping counteracts recrystallization of a layer of amorphous selenium in an image sensor (column 6, lines 35-36). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the image recording medium of Imai to dope the amorphous selenium charge transfer layer therein as suggested by Fallone *et al.* especially in view of the advantageous counteraction of recrystallization identified by Brauers *et al.* for such doping.

With respect to dependent claim 9, see the explanation of the rejections against claims 2 through 5 above.

With respect to dependent claims 10 and 11, see the explanation of the rejection against claims 6 and 7 above.

3. Claims 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imai (EP0898421A2) in view of Fallone *et al.* (US005686733A) and Brauers *et al.* (US005729021A) and Urabe (US004990420A).

With respect to independent claim 12, the image recording medium recited is made obvious by the combination of Imai, Fallone *et al.*, and Brauers *et al.*, see the explanation of the rejection against claims 1 through 7, notwithstanding the lack of requirement for amorphous selenium particularly. Urabe discloses that “resistance heating deposition” (column 5, lines 6-7) is a known method of forming a recording photoreceptor layer of an alloy material containing therein selenium as a major component, even one doped with arsenic in the claimed range and one doped with chlorine in the claimed range (column 5, lines 63-65). In view of the disclosed suitability of the

resistance heating deposition suggested by Urabe to form a layer as required by the combination of Imai, Fallone *et al.*, and Brauers *et al.*, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify any method of manufacturing disclosed by these references to specify the use of resistance heating deposition, especially since Imai does not identify any particular method of manufacturing.

With respect to dependent claims 13 and 14, see the explanation of the rejection against claims 6 and 7 above.

With respect to independent claim 15, the image recording medium recited is made obvious by the combination of Imai, Fallone *et al.*, and Brauers *et al.*, see the explanation of the rejection against claims 8 and 9, notwithstanding the lack of requirement for amorphous selenium particularly. Urabe discloses that “resistance heating deposition” (column 5, lines 6-7) is a known method of forming a recording photoreceptor layer of an alloy material containing therein selenium as a major component, even one doped with arsenic in the claimed range and one doped with chlorine in the claimed range (column 5, lines 63-65). In view of the disclosed suitability of the resistance heating deposition suggested by Urabe to form a layer as required by the combination of Imai, Fallone *et al.*, and Brauers *et al.*, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify any method of manufacturing disclosed by these references to specify the use of resistance heating deposition, especially since Imai does not identify any particular method of manufacturing.

With respect to dependent claims 16 and 17, see the explanation of the rejection against claims 10 and 11 above.

Response to Submission(s)

4. The amendment filed September 14, 2004 has been entered.

5. Applicant's arguments filed September 14, 2004 have been fully considered but they are not persuasive.

The denial that no reference or combination teaches that "the recording photoconductive layer is formed of a material containing a-Se as a major component and doped with a material for suppressing bulk crystallization of a-Se" is not persuasive when, as here, the Examiner has shown the recording photoconductive layer and its formation with a-Se in Imai, the exact dopant materials in Fallon *et al.*, and the exact dopant material and reason for doping a-Se in Brauers *et al.*

For at least the reasons explained above, Applicant is not entitled to a favorable determination of patentability in view of the arguments submitted September 14, 2004.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Constantine Hannaher whose telephone number is (571) 272-2437. The examiner can normally be reached on Monday-Friday with flexible hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ch


Constantine Hannaher
Primary Examiner